

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species A(1), directed to claims 1-6 and 11-14 in the reply filed on 9/7/2010 is acknowledged. The traversal is on the ground(s) that the examiner has not considered the guidelines presented MPEP §806.04(b), §806.05(j) and §809.02(a). This is not found persuasive because those portions of the MPEP to which the applicants have pointed demonstrate restriction guidelines for those applications filed under 35 U.S.C. 111(a) and not for applications entering the National Stage under 35 U.S.C. 371 as is the case with the current invention (see MPEP 800).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 7-10 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention(s), there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/7/2010.

Information Disclosure Statement

3. The information disclosure statement filed 3/28/2006 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

4. The use of trademarks, for example [KURAMILON U1190], has been noted in this application. Trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. **Claim 5** is objected to because of the following informalities: the examiner suggests amending the claim to include "product" after "hydrogenation" if that is what the applicants intend. Appropriate correction is required.

7. **Claim 6** is objected to because of the following informalities: the examiner suggests amending the claim to "...is a hydrogenation product of a conjugated..." if that is what the applicants intend. Appropriate correction is required.

8. **Claim 13** is objected to because of the following informalities: the examiner suggests amending the claim to “...100 parts by mass of total of the polymer...” or in some other manner indicative of the presently claimed invention so as to better conform to proper structure. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 1-6 and 11-14** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. **Claim 1** recites the limitation "the light emitting side" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

12. **Claim 1** recites the limitation "the light emitting face" in line 8. There is insufficient antecedent basis for this limitation in the claim.

13. **Claim 2** recites the limitation "the total transmittance" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 6, it is unclear to which of the preceding limitations, i.e. the vinyl bond, the entire polymer, etc., the "is hydrogenated" refers.

Regarding claim 6, it is unclear to what measurement value (i.e. mass, moles, etc.) the 25 % (and 25 to 95%) of a vinyl bond refers.

Regarding claim 6, it is unclear from the claim limitations, and the grammatical structure of said claim, to which of the previous claim limitation or previous claim limitations, the last two words "is hydrogenated" refers.

14. **Claim 12** recites the limitation "the kinematic viscosity" in line 2. There is insufficient antecedent basis for this limitation in the claim.

15. **Claim 13** recites the limitation "the content" in line 2. There is insufficient antecedent basis for this limitation in the claim.

16. **Claim 13** recites the limitation "the range" in line 2. There is insufficient antecedent basis for this limitation in the claim.

17. **Claim 13** recites the limitation "the polymer" in line 3. There is insufficient antecedent basis for this limitation in the claim.

18. **Claim 14** recites the limitation "the thinnest part" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

20. **Claims 1-6 and 11-13** are rejected under 35 U.S.C. 102(b) as being anticipated by Imai et al. (US 5216074).

Regarding claims 1-6 and 11-13, Imai teaches a thermoplastic elastomer composition comprising 1 to 99 pbw of (ii) at least one of a thermoplastic resin and rubber polymer (flexible polymer composition), and 99 to 1 pbw of (i); wherein (i) is a hydrogenated product of a copolymer consisting of (C) and (D) having a C-D-C formula; wherein (C) is a polybutadiene block segment having a 1,2-vinyl content of not more than 20% and (D) is a block segment of a polybutadiene or of a alkanyl aromatic-butadiene copolymer with the butadiene portion having a 1,2-vinyl content of 25 to 95% (claim 1).

It is noted that (C) and (D) teaches a diene-based polymer of current claim 4 and a butadiene block copolymer of current claim 5, wherein (C) and (D) further teaches a butadiene polymer block (I) and polymer block (II) of a conjugated diene unit (a1) in a ratio of 100/0, respectively, of current claim 6.

Imai also teaches that the thermoplastic elastomer compositions further contains (iii) a non-aromatic process oil (liquid material) in a proportion of 1-300 pbw per 100 pbw of (i) and (ii) (claim 4), such as [PW-90], which is identical to the liquid material (currently claimed kinematic viscosity) presently claimed and disclosed, in an amount 70 pbw per 100 pbw of (i) and (ii) (Table 2, Example 11 in columns 27 and 28). The examiner notes that the "total of the polymer in said flexible polymer composition" has been interpreted by the examiner to include all polymers of which the currently claimed composition may be comprised (note the lack of antecedent basis from claims 1 to 11 to 13) such as the (i) and (ii) polymers of the prior art reference.

Given that the Imai reference discloses a thermoplastic elastomer composition identical to the flexible polymer composition presently claimed, including a diene-based block copolymer having the same compositional makeup as claimed and a liquid material identical to that presently claimed, it is clear that the thermoplastic elastomer composition would inherently provide a transparent sealant and inherently possess a total transmittance of 90 % or higher when formed to a thickness of 0.5 mm.

The recitation in the claims that the transparent sealant is "for organic element, which is used in an electroluminescence display panel comprising a light emitting element sequentially including a substrate, an anode layer, a light emitting layer and a cathode layer, and a sealing member disposed on the light emitting side of said light emitting element" and "is disposed between the light emitting side face of said light emitting element and said sealing member" is merely an intended use.

Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Imai discloses a flexible polymer composition as presently claimed, it is clear that the thermoplastic elastomer composition of Imai would be capable of performing the intended use, i.e. a transparent sealant for organic EL element, presently claimed as required in the above cited portion of the MPEP.

21. **Claims 1 and 3-6** are rejected under 35 U.S.C. 102(b) as being anticipated by Biebuyck et al. (US 5734225).

Regarding claims 1 and 3-6, Biebuyck teaches encapsulation of organic light emitting devices (OLED) using siloxane or siloxane derivatives (title) (silicone-based polymer) and an OLED which is encapsulated by a Siloxane buffer layer (abstract), said OLED having a layered structure of substrate (11), cathode (12), electron transport layer (13), organic layer (14), hole transport layer (15), anode (16), Siloxane buffer layer (17.1) (sealant) and second layer (17.2) (sealing member) (column 5, lines 41-58 and figure 1), wherein (13), (14) and (15) teach the

presently claimed light emitting layer, and Siloxane buffer layer (17.1) is disposed between anode (16) and second layer (17.2), which would be the light emitting face as demonstrated in figure 1.

It is noted that the reference also teaches that the Siloxane buffer layer is used in *cathode-up* structures, which teaches the presently claimed substrate → anode → light emitting layer → cathode → transparent sealant → sealing member configuration. Biebuyck also teaches that the Siloxane buffer layer is elastic and conformable (elastomer composition, flexible polymer composition) (column 5, lines 23-25) and transparent (column 3, lines 34-36).

It is also noted that claims 5-6 are in the current rejection since these claims just further limit an alternative member of a Markush group. If limitations of claim 5 and/or claim 6 were imported into claim 4, claim 4 would still be rejected by Biebuyck.

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
24. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. (US 5216074).

Regarding claim 14, Imai teaches a thermoplastic elastomer composition as in the rejection of claim 1 above, including inherently possessing a total transmittance of 90 % or higher when formed to a thickness of 0.5 mm, or 500 µm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to select the presently claimed thickness to provide a high transmittance to a composition as in the present invention.

25. **Claims 2 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Biebuyck et al. (US 5734225).

Regarding claims 2 and 14, Biebuyck teaches the encapsulation of organic light emitting devices using siloxane or siloxane derivatives as in the rejection of claim 1 above. While Biebuyck is specifically silent to the transmittance and thickness limitations of the presently claimed transparent sealant, Biebuyck does teach that a flexible encapsulant can be obtained depending on the thickness (column 6, lines 17-18). Biebuyck also teaches that it is important to choose a Siloxane which is transparent to the wavelength of the OLED (column 4, lines 45-47).

Therefore, given that the Biebuyck invention is directed to light emitting devices and a Siloxane buffer layer through which light from said devices is to be transmitted, it would have been obvious to one of ordinary skill in the art at the time of the invention to select a Siloxane buffer layer of thickness and transmittance as presently claimed towards OLED comprising the Siloxane buffer layer having flexibility and faithful image transmittance as in the present invention.

26. **Claims 11-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Biebuyck et al. (US 5734225) in view of Imai et al. (US 5216074).

Regarding claims 11-13, Biebuyck teaches the encapsulation of organic light emitting devices using siloxane or siloxane derivatives as in the rejection of claim 1 above. Biebuyck is silent to a flexible polymer composition comprises a liquid material having a the presently claimed kinematic viscosity in an amount of 50 to 5,000 pbw per 100 pbw of the total polymer.

However, Imai teaches thermoplastic elastomer compositions contain 10-90 pbw of (i), 90-10 pbw of (ii) and (iii) a non-aromatic process oil (liquid material) in a proportion of 1-300 pbw per 100 pbw of (i) and (ii) (column 2, lines 39-46)), such as [PW-90], which is identical to the liquid material (currently claimed kinematic viscosity) presently claimed and disclosed.

Imai also teaches that when the amount of (iii) is less than 1 pbw no softening is obtained and when the amount of (iii) is more than 300 pbw bleeding occurs and strength is reduced

(column 16, lines 67-68 to column 17, lines 1-2), and that (ii) is silicone rubber (column 10, lines 35-36 and lines 57-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Biebuyck and Imai references to obtain a Siloxane buffer layer having enhanced processability via the addition of a viscosity-influencing process oil in an amount as presently claimed that provides softening without bleeding and/or a reduction in strength as in the present invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK D. DUCHENEAUX whose telephone number is (571)270-7053. The examiner can normally be reached on M-Th, 7:30 A.M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie E. Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/F. D. D./
Examiner, Art Unit 1788

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1787